INTRODUCTION

M. Sistematización metodológica en Paleopatología (Alcalá la Real, 9 Abril-2 Mayo de 1999)


Company: 717-818.

10th left rib (Sk. 102)

Carina Marques, Cláudia dos Hospitais da Universidade de Coimbra; Serviço de Imagiología Antropologia, Universidade de Institute of Bioarcheology; Museu Tecnologia; Centro de Fundação para a Ciência e


modern12,17 human populations. However, there are few palaeopathological2-5 or forensic18 publications reporting their prevalence and characteristics. The absence of precise data on broken ribs precludes an accurate understanding of ribcage fracture patterns and restricts comparisons between studies either from archaeological or forensic contexts.

Aims:

• Report healed rib fractures prevalence.
• Interpret fractures based on a biocultural approach.
• To test if pulmonary diseases increases fractures prevalence.

The main results are summarized in table 1.

Table 1 - Rib fractures summarized results.

<table>
<thead>
<tr>
<th>Group of cause of death</th>
<th>Pulmonary</th>
<th>Osteoarticular</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary</td>
<td>24</td>
<td>15</td>
<td>39</td>
</tr>
<tr>
<td>Osteoarticular</td>
<td>9</td>
<td>22</td>
<td>31</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>37</td>
<td>70</td>
</tr>
</tbody>
</table>

• 47 (23,9%) out of the 197 individuals presented at least one broken rib.
• Men (55,3%, n=26) are more affected than women (44,7%, n=21).
• Fractures prevalence is positively correlated with older age classes (Fig. 1).
• No group of cause of death (ICD-10) is preferentially affected (Fig 1).
• 5 individuals with pneumonic related causes of death do not present rib fractures.
• Rib fracture prevalence between pulmonary and non-pulmonary groups is not significant.

INJURY RELATED FRACTURES

• The single rib fractures found probably results from direct impact to the chest10-12, while multiple ones or upper rib fractures derives from violent forces10-12.
• An isolated first rib fracture (Sk. 1123) can be secondary to its avulsion by muscular attachments rather than direct trauma11.
• Posterior rib fractures (Sk. 1158) indicates antero-posterior compressing forces11,14.

PNEUMONIA and RIB FRACTURES

Rib fractures are a frequent origin of pulmonary complications11,19, specially pneumonia that commonly causes death in individuals with broken ribs20. Literature reports21 shows that pneumonia incidence increases with higher number of ribs fractured. In fact, the present study reveals that 3 out of 4 individuals with 8 ribs fractured (the highest value observed) died from pneumonia.